

We claim:

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1. A system for engaging the peripheral attention of a person in the vicinity of a display device, comprising:

5 a content display system associated with the display device, the content display system including means for receiving a set of content data and a set of instructions for enabling a display device to selectively display, in an unobtrusive manner that does not distract a user of the apparatus from a primary interaction with the apparatus, an image or images generated from a set of content data, the content display system further including means for using the display device to selectively display the image or images using the set of instructions;

10 a content providing system including means for providing a set of content data to the content display system;

15 means for providing to the content display system a set of instructions for enabling a display device to selectively display an image or images generated from a set of content data;

20 first communication means for enabling communication between the means for providing and the content display system; and

25 second communication means for enabling communication between the content providing system and the content display system.

2. A system as in Claim 1, further comprising:

30 an application management system including means for providing one or more sets of instructions for enabling a display device to selectively display an image or images generated from a set of content data;

and

third communication means for enabling
communication between the application management system
and the content providing system or the content display
system.

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3. A system as in Claim 2, wherein:

the means for providing comprises the application
management system; and

the third communication means enables communication
between the application management system and the
content display system.

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4. A system as in Claim 2, wherein:

the means for providing comprises the content
providing system; and

the third communication means enables communication
between the application management system and the
content providing system.

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5. A system as in Claim 1, wherein the set of
instructions for enabling a display device to selectively
display an image or images generated from a set of content
data further comprises:

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a set of application instructions, the application
instructions further comprising:

operating instructions for beginning, managing
and terminating the selective display of the image
or images by the content display system; and

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content display system scheduling instructions
for scheduling the display on the content display
system of an image or images generated from a set
of content data; and

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a set of control instructions, the control instructions further comprising:

display instructions for enabling display on the display device of an image or images generated from a set of content data; and

content data scheduling instructions for providing temporal constraints on the display of an image or images generated from a particular set of content data.

6. A system as in Claim 1, wherein the set of instructions for enabling a display device to selectively display an image or images further comprises content data acquisition instructions.

7. A system as in Claim 6, wherein the set of content data acquisition instructions further comprises:

acquisition instructions for enabling acquisition of a set of content data; and

content data update instructions for enabling acquisition of an updated set of content data that corresponds to a previously acquired set of content data.

8. A system as in Claim 1, wherein the means for providing can supply a plurality of sets of instructions for enabling a display device to selectively display an image or images generated from a set of content data.

9. A system as in Claim 1, wherein one or more content providing systems can provide a plurality of sets of content data to the content display system.

10. A system as in Claim 1, wherein:

the means for providing can supply a plurality of sets of instructions for enabling a display device to selectively display an image or images generated from a set of content data;

one or more content providing systems can provide a plurality of sets of content data to the content display system; and

at least one of the plurality of sets of instructions for enabling a display device to selectively display an image or images generated from a set of content data can be used to display an image or images generated from only some of the sets of content data.

11. A system as in Claim 10, further comprising:

means for determining, when a set of content data is acquired by the content display system, whether a set of instructions for enabling a display device to selectively display an image or images has been received by the content display system;

means for identifying, when a set of content data is acquired by the content display system, which set or sets of instructions for enabling a display device to selectively display an image or images has been received by the content display system, if any; and

means for causing a set of instructions for enabling a display device to selectively display an image or images that can display the image or images generated from the set of content data being acquired to be transferred to the content display system, if no set of instructions received by the content display system enables display of the image or images generated from

the set of content data that is being acquired.

12. A system as in Claim 1, for use with a plurality of types of display devices, each display device having an associated content display system, wherein:

5 the means for providing can supply a plurality of sets of instructions for enabling a display device to selectively display an image or images;

 each of the plurality of sets of instructions for enabling a display device to selectively display an
10 image or images further comprises a set of display instructions, each set of display instructions being optimized for use by a particular type of display device.

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13. A system as in Claim 1, further comprising means
15 for auditing the display of sets of content data by the content display system.

14. A system as in Claim 1, wherein the content data is video data.

15. A system as in Claim 14, wherein display of the
20 video data produces a still image.

16. A system as in Claim 14, wherein display of the video data produces a moving image.

17. A system as in Claim 1, wherein the content data is audio data.

25 18. A system as in Claim 1, wherein the display device is associated with a computer.

19. A system for engaging the peripheral attention of a person in the vicinity of a display device of an apparatus, comprising:

5 means for acquiring a set of content data from a content providing system; and

10 means for selectively displaying on the display device, in an unobtrusive manner that does not distract a user of the apparatus from a primary interaction with the apparatus, an image or images generated from the set of content data.

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20. A system as in Claim 19, further comprising means for detecting an idle period of predetermined duration, and wherein the means for selectively displaying displays the image or images automatically after detection of the idle
15 period.

21. A system as in Claim 19, wherein the means for selectively displaying displays the image or images while the user is engaged in a primary interaction with the apparatus, which primary interaction can result in the display of an
20 image or images in addition to the image or images generated from the set of content data.

22. A system as in Claim 19, further comprising means for non-volatilely storing the set of content data.

23. A system as in Claim 19, further comprising:
25 means for indicating a time at which the means for selectively displaying is to begin display of the image or images; and
means for activating the means for acquiring at the indicated time, such that the means for selectively

displaying displays the image or images in real time as the set of content data is acquired by the means for acquiring.

24. A system as in Claim 19, wherein the means for
5 selectively displaying further comprises means for scheduling the display of the image or images generated from a set of content data.

25. A system as in Claim 19, further comprising means for updating the set of content data.

10 26. A system as in Claim 25, wherein the means for updating operates without disrupting use of the apparatus by the user during the time that the means for updating is operating.

27. A system as in Claim 26, wherein the means for
15 updating obtains the updated set of content data from the content providing system.

28. A system as in Claim 27, wherein the means for updating operates automatically, without intervention by the user.

20 29. A system as in Claim 27, wherein the means for updating further comprises:

means for specifying the location of the content providing system; and

25 means for specifying the time at which an updated set of content data is to be obtained from the content providing system.

30. A system as in Claim 19, wherein the means for detecting further comprises a location in a memory that stores data representing the duration of time since a last user interaction with the apparatus, the memory location
5 being predetermined according to a method for operating the apparatus, such that an idle period is detected when the stored duration of time is equal to the predetermined duration.

31. A system as in Claim 19, further comprising:
10 means for interrupting a process being implemented by the apparatus at the time that the means for selectively displaying begins operating;
means for storing information representing the state of the process at the time of interruption; and
15 means for beginning operation of the process, using the stored state of the process, after the means for selectively displaying stops operating.

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32. A system as in Claim 19, further comprising means for detecting a predetermined user interaction with the
20 apparatus subsequent to detection of the idle period, wherein occurrence of the predetermined user interaction causes the means for selectively displaying to stop displaying an image or images generated from a set of content data.

33. A system as in Claim 19, further comprising:
25 means for displaying one or more control options with the display device while the means for selectively displaying is operating;
means for selecting a displayed control option; and
means for controlling aspects of the operation of
30 the system in accordance with a selected control option.

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34. A system as in Claim ~~33~~⁴, wherein:
the control option enables the user to request
termination of operation of the system; and
the means for controlling terminates operation of
the system.

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35. A system as in Claim ~~33~~⁴, wherein:
the means for selectively displaying further
comprises means for scheduling the display of an image
or images generated from a set of content data;
the control option enables the user to request
display of a next image or images generated from a next
set of content data; and
the means for controlling displays the next image.

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36. A system as in Claim ~~33~~⁴, wherein:
the means for selectively displaying further
comprises means for scheduling the display of an image
or images generated from a set of content data;
the control option enables the user to request
display of a previous image generated from a previous
set of content data; and
the means for controlling displays the previous
image.

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37. A system as in Claim ~~33~~⁴, wherein:
a plurality of sets of content data are acquired by
the system;
the means for selectively displaying further
comprises means for scheduling the display of the image
or images generated from the sets of content data;
the control option enables the user to remove a set
of content data from the schedule; and

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the means for controlling removes the set of content data from the schedule.

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38. A system as in Claim 33, wherein:

5 a plurality of sets of content data are acquired by the system, at least one of the sets of content data capable of being occasionally updated;

the means for selectively displaying further comprises means for scheduling the display of the image or images generated from the sets of content data;

10 the control option enables the user to prevent the display of an image generated from a designated set of content data until the designated set of content data has been updated; and

15 the means for controlling prevents the display of the image generated from the designated set of content data until the designated set of content data has been updated.

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39. A system as in Claim 33, wherein:

20 a plurality of sets of content data are acquired by the system;

the means for selectively displaying further comprises means for scheduling the display of the image or images generated from the sets of content data;

25 the control option enables the user to specify a satisfaction level for a currently displayed image from a current set of content data; and

the means for controlling revises the schedule in response to the specified satisfaction level.

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40. A system as in Claim 35, wherein:

30 the control option enables the user to establish a

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link with an information location; and
the means for controlling establishes the link with
the information location.

41. A system as in Claim 19, wherein the content data
5 is video data.

42. A system as in Claim 41, wherein display of the
video data produces a still image.

43. A system as in Claim 41, wherein display of the
video data produces a moving image.

10 44. A system as in Claim 19, wherein the content data
is audio data.

45. A system as in Claim 19, wherein the apparatus is a
computer.

46. A method for engaging the peripheral attention of a
15 person in the vicinity of a display device of an apparatus,
comprising:

acquiring a set of content data from a content
providing system; and

20 selectively displaying on the display device, in an
unobtrusive manner that does not distract a user of the
apparatus from a primary interaction with the apparatus,
an image or images generated from the set of content
data.

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C5 47. A method as in Claim 46, further comprising the
25 step of detecting an idle period of predetermined duration,
and wherein the step of selectively displaying further

comprises the step of displaying the image or images automatically after detection of the idle period.

48. A method as in Claim 46, wherein the step of selectively displaying further comprises displaying the image
5 or images while the user is engaged in a primary interaction with the apparatus, which primary interaction can result in the display of an image or images in addition to the image or images generated from the set of content data.

49. A computer readable medium encoded with one or more
10 computer programs for enabling acquisition of a set of content data and display of an image or images generated from the set of content data on a display device during operation of an attention manager, comprising:

acquisition instructions for enabling acquisition
15 of a set of content data from a specified information source;

user interface installation instructions for enabling provision of a user interface that allows a person to request the set of content data from the
20 specified information source;

content data scheduling instructions for providing temporal constraints on the display of the image or images generated from the set of content data; and

display instructions for enabling display of the
25 image or images generated from the set of content data.

50. A computer readable medium as in Claim 49, wherein the content data scheduling instructions further comprise duration instructions for enabling specification of the duration of time that the image or images generated from a
30 set of content data can be displayed.

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51. A computer readable medium as in Claim 50, wherein the duration instructions specify a duration of time that is dependent upon the particular time at which the image or images generated from a set of content data are displayed 5 after the attention manager begins operating.

52. A computer readable medium as in Claim 50, wherein the duration instructions specify a duration of time that is dependent upon the number of previous times that the image or images have been displayed during a continuous operation of 10 the attention manager.

53. A computer readable medium as in Claim 49, wherein the content data scheduling instructions further comprise sequencing instructions that specify an order in which the images generated from a plurality of sets of content data are 15 displayed.

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16 54. A computer readable medium as in Claim 53, wherein the sequencing instructions further specify the duration of the display of each image or images generated from each set of content data.

20 55. A computer readable medium as in Claim 49, wherein the content data scheduling instructions further comprise timing instructions that specify a time or times at which the image or images generated from a set of content data can or cannot be displayed.

25 56. A computer readable medium as in Claim 55, wherein the timing instructions specify an absolute time or times.

57. A computer readable medium as in Claim 55, wherein

the timing instructions ~~(specify a relative time or times.~~

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58. A computer readable medium as in Claim 49, wherein the content data scheduling instructions further comprise saturation instructions that constrain the number of times
5 that the image or images generated from a set of content data can be displayed.

59. A computer readable medium as in Claim 49, wherein:
the display device is of a particular type; and
the display instructions further comprise
10 instructions for enabling display of the image or images generated from a set of content data on a display device of the particular type.

60. A computer readable medium as in Claim 49, wherein the display instructions further comprise instructions for
15 enabling display of an image or images generated from a set of content data of a particular type.

61. A computer readable medium as in Claim 49, further comprising content data update instructions for enabling acquisition of an updated set of content data from an
20 information source that corresponds to a previously acquired set of content data.

62. A computer readable medium as in Claim 61, wherein the content data update instructions further comprise instructions indicating the location of the information
25 source from which to obtain the updated set of content data.

63. A computer readable medium as in Claim 61, wherein the content data update instructions further comprise

instructions indicating a time or times at which to obtain the updated set of content data.

64. A computer readable medium as in Claim 61, for use by a content display system, further comprising:

5 operating instructions for beginning, managing and terminating the display on the display device of an image generated from a set of content data;

 content display system scheduling instructions for scheduling the display of the image or images on the display device; and

10 installation instructions for installing the operating instructions and content display system scheduling instructions on the content display system.

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~~65. A computer readable medium as in Claim 64, further comprising audit instructions for monitoring usage of the content display system to selectively display an image or images generated from a set of content data.~~

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~~66. A computer readable medium encoded with one or more computer programs for enabling a content display system to selectively display on a display device, in an unobtrusive manner that does not distract a person from a primary interaction with an apparatus associated with the display device, an image generated from a set of content data, comprising:~~

25 operating instructions for beginning, managing and terminating the selective display of the image on the display device;

 content display system scheduling instructions for scheduling the display of the image on the display device; and

installation instructions for installing the
operating instructions and content display system
scheduling instructions on a content display system.

67. A computer readable medium as in Claim 66, further
5 comprising audit instructions for monitoring usage of the
content display system to selectively display an image
generated from a set of content data.